

Listing of the Claims

1. (Currently Amended) A plunger pump comprising:
a packing bore for a reciprocating plunger, wherein the packing bore has a generally cylindrical interior wall and a seat and a removable gland, and;
a packing cartridge, wherein the packing cartridge comprises:
 - a. a generally-cylindrical sleeve having an outer cylindrical profile at least partially positioned in the packing bore;
 - b. a first abutment ring positioned in the sleeve;
 - c. a second abutment ring positioned in the sleeve and co-axially spaced apart from the first abutment ring;
 - d. telescoping structures operatively positioned between the first abutment ring and the second abutment ring to allow for squeezing of the first abutment ring and second abutment ring co-axially closer to one another while the telescoping structures are free to rotate relative to one another as the abutment rings are axially squeezed; and
 - e. a retaining ring operatively positioned between the telescoping structures to retain the telescoping structures together and to allow for squeezing of the first abutment ring and second abutment ring co-axially closer to one another, wherein the telescoping structures would not be axially retained together in the absence of the removable gland and the retaining ring;wherein the packing cartridge is positioned in the packing bore between the seat and the removable gland so that the squeezing of the first abutment ring and the second abutment ring closer together is provided by tightening the removable gland over the packing cartridge.
2. Canceled.
3. (Previously Amended) The plunger pump according to Claim 1, wherein the telescoping structures have at least sufficient overlapping travel to allow for the expected crushing of packing during the operation of a plunger through the packing cartridge.

4. (Previously Amended) The plunger pump according to Claim 1, further comprising: a spring operatively positioned between the first abutment ring and the second abutment ring.
5. (Previously Amended) The plunger pump according to Claim 4, wherein the telescoping structures have at least sufficient overlapping travel to help maintain the first abutment ring and second abutment ring in substantial co-axial alignment while the spring is anywhere between a substantially relaxed condition and a substantially compressed condition.
6. (Previously Amended) The plunger pump according to Claim 1, wherein the sleeve further comprises a first sleeve portion and a second sleeve portion, and wherein the telescoping structures are a part of the first and second sleeve portions.
7. (Previously Amended) The plunger pump according to Claim 6, wherein the first sleeve portion is positioned in at least a portion of the packing bore; and the second sleeve portion has at least a portion thereof telescopically positioned in at least a portion of the first sleeve portion.
8. (Previously Amended) The plunger pump according to Claim 6, wherein the first abutment ring is operatively connected to the first sleeve portion and the second abutment ring is operatively connected to the second sleeve portion.
9. (Previously Amended) The plunger pump according to Claim 6, wherein the first abutment ring is integrally formed with the first sleeve portion and the second abutment ring is integrally formed with the second sleeve portion.
10. (Previously Amended) The plunger pump according to Claim 6, further comprising a spacer ring operatively positioned to cover the overlapping travel the telescoping structures between the first and second sleeve portions, wherein the spacer ring is positioned to

help prevent seepage of fluid into any clearances between the first sleeve portion and the second sleeve portion.

11. (Previously Amended) The plunger pump according to Claim 1, wherein the telescoping structures are a part of the sleeve and one of the first and second abutment rings.

12. (Previously Amended) The plunger pump according to Claim 11, wherein the other one of the first and second abutment rings is integrally formed with the sleeve.

13. (Previously Amended) The plunger pump according to Claim 1, wherein the retaining ring comprises a resilient ring positioned in a groove in one of the telescoping structures, whereby the resilient ring frictionally engages the other telescoping structure to resist separation of the telescoping structures.

14. Canceled.

15. (Previously Amended) The plunger pump according to Claim 1, further comprising: packing positioned between the first abutment ring and the second abutment ring.

16. (Previously Amended) The plunger pump according to Claim 15, wherein the packing further comprises a plurality of packing elements.

17. (Previously Amended) The plunger pump according to Claim 16, wherein at least one packing spacer is positioned between any two of the plurality of packing elements.

18 – 64. Canceled.

65. (Currently Amended) A plunger pump comprising:
- a packing bore for a reciprocating plunger, wherein the packing bore has a generally cylindrical interior wall and a seat and a removable gland, and;
 - a packing cartridge, wherein the packing cartridge comprises:
 - a. a first element comprising:
 - i. a first sleeve portion having an outer cylindrical profile positioned in at least a portion of the packing bore; and
 - ii. a first abutment ring positioned to extend inwardly and substantially circumferentially relative to the first sleeve portion; and
 - b. a second element comprising:
 - i. a second sleeve portion having at least a portion thereof telescopically positioned in at least a portion of the first sleeve portion; and
 - ii. a second abutment ring positioned to extend inwardly and substantially circumferentially relative to the second sleeve portion; and
 - c. a means for axially retaining the first and second sleeve portions together, wherein the first and second sleeve portions would not be axially retained together in the absence of the removable gland and the means for axially retaining;
- wherein the first sleeve portion and the second sleeve portion and the means for axially retaining are operatively positioned between the first abutment ring and the second abutment ring to allow for squeezing of the first abutment ring and second abutment ring co-axially closer to one another while the first and second sleeves are free to rotate relative to one another as the first and second abutment rings are axially squeezed together; and
- wherein the packing cartridge is positioned in the packing bore between the seat and the removable gland so that the squeezing of the first abutment ring and the second abutment ring closer together is provided by tightening the removable gland over the packing cartridge.

66. (Previously Amended) The plunger pump according to Claim 65, further comprising a spacer ring operatively positioned to cover the overlapping travel of the first and second sleeve portions, wherein the spacer ring is positioned to help prevent seepage of fluid into any clearances between the first sleeve portion and the second sleeve portion.

67 – 75. Canceled.

76. (Previously Amended) The plunger pump according to Claim 65, further comprising: a spring operatively positioned between the first abutment ring and the second abutment ring.

77. Canceled.

78. (Previously Amended) The plunger pump according to Claim 76, wherein the telescoping first and second sleeve portions have at least sufficient overlapping travel to help maintain the first abutment ring and second abutment ring in substantial co-axial alignment while the spring is anywhere between a substantially relaxed condition and a substantially compressed condition.

79. (Previously Amended) The plunger pump according to Claim 65, further comprising: packing positioned between the first abutment ring and the second abutment ring.

80. (Previously Amended) The plunger pump according to Claim 79, wherein the packing further comprises a plurality of packing elements.

81. (Previously Amended) The plunger pump according to Claim 80, wherein at least one packing spacer is positioned between any two of the plurality of packing elements.

82. (Previously Amended) The plunger pump according to Claim 65, wherein the first abutment ring is integrally formed with the first sleeve portion and the second abutment ring is integrally formed with the second sleeve portion.

83 – 129. Canceled.

130. (Previously Amended) The plunger pump according to Claim 65, wherein the means for axially retaining comprises:

a. a retaining groove and an interference surface cooperatively positioned between the first and second sleeve portions; and

b. a resilient ring positioned in the retaining groove for frictionally engaging the interference surface, whereby when the resilient ring in the retaining groove is moved axially against the interference surface, the resilient ring frictionally engages the interference surface and resists separation of the first and second sleeve portions.

131. Canceled.

132. (Previously Amended) The plunger pump according to Claim 1, wherein the telescoping structures and the retaining ring are operative to allow a packing to be held in a pre-assembled but relaxed condition.

133. Canceled.

134. (Previously Amended) The plunger pump according to Claim 65, wherein the first and second sleeve portions and the means for axially retaining are operative to allow a packing to be held in a pre-assembled but relaxed condition.

135. (Currently Amended) A plunger pump comprising:

a packing bore for a reciprocating plunger, wherein the packing bore has a generally cylindrical interior wall and a seat and a removable gland, and;

a packing cartridge, wherein the packing cartridge comprises:

a. a generally-cylindrical sleeve having an outer cylindrical profile at least partially positioned in the packing bore;

b. a first abutment ring positioned in the sleeve;

c. a second abutment ring positioned in the sleeve and co-axially spaced apart from the first abutment ring;

d. packing positioned between the first abutment ring and the second abutment ring;

e. telescoping structures operatively positioned between the first abutment ring and the second abutment ring to allow for squeezing of the first abutment ring and second abutment ring co-axially closer to one another while the telescoping structures are free to rotate relative to one another as the abutment rings are axially squeezed together; and

f. a retaining ring operatively positioned between the telescoping structures to retain the telescoping structures together and to allow for squeezing of the first abutment ring and second abutment ring co-axially closer to one another, wherein telescoping structures would not be axially retained together in the absence of the removable gland and the retaining ring;

wherein the packing cartridge is positioned in the packing bore between the seat and the removable gland so that the squeezing of the first abutment ring and the second abutment ring closer together can be provided by tightening the removable gland over the packing cartridge; and

wherein the telescoping structures and the retaining ring are operative to allow the packing to be held in a pre-assembled but relaxed condition.

136. (Previously Amended) The plunger pump according to Claim 135, further comprising: a spring operatively positioned between the first abutment ring and the second abutment ring.

137. (Previously Amended) The plunger pump according to Claim 136, wherein the telescoping structures have at least sufficient overlapping travel to help maintain the first abutment ring and second abutment ring in substantial co-axial alignment while the spring is anywhere between a substantially relaxed condition and a substantially compressed condition.

138. (Previously Amended) The plunger pump according to Claim 137, wherein the sleeve further comprises a first sleeve portion and a second sleeve portion, and wherein the telescoping structures are a part of the first and second sleeve portions.

139. (Previously Amended) The plunger pump according to Claim 138, further comprising a spacer ring operatively positioned to cover the overlapping travel of the telescoping structures between the first and second sleeve portions, wherein the spacer ring is positioned to help prevent seepage of fluid into any clearances between the first sleeve portion and the second sleeve portion.